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Bears Wear Buttons



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Topic
Counting

Key Question
How can we use buttons to learn about counting?

Learning Goals
Students will:

- connect number words and numerals to a counted set of objects, and
- order whole numbers using sets of concrete objects and pictorial models.

Guiding Document
*NCTM Standards 2000**

- *Count with understanding and recognize "how many" in sets of objects*
- *Connect number words and numerals to the quantities they represent, using various physical models and representations*

Math
Number

Integrated Processes
Observing
Comparing and contrasting
Applying

Materials
For the class:
buttons
shirt numeral cards
dry erase or transparency pens

Background Information
This lesson provides an opportunity for students to connect the symbolic numerals with counted sets. According to John A. Van de Walle (*Elementary School Mathematics*, 1994. p.88), counting involves many separate skills. First, students must be able to use counting words in order (one, two, three, four, etc.). Second, students must be able to connect this sequence in a one-to-one manner with the objects in the set being counted. Each object must get one and only one count. Finally, students must be able to connect the counting words and the counted objects to written numbers.

It is suggested that the teacher open the lesson by telling a story about a family of bears who loves to wear buttons on their shirts. Through the discussion of the lesson, students are also asked to review concepts of most, fewest; more than, less than; etc.

Bears Wear Buttons

Once upon a time there was a family of bears who wore wonderful buttons on their clothes. The bears collected buttons of all colors, shapes, and sizes. They liked to vary the number of buttons on their shirts so they put numbers on the shirts to keep track of the numbers of buttons to be placed on them. The bears would spread out the numbered shirts and then match the correct number of buttons to each shirt according to the numerals on the shirts. The bear family was so excited each time they finished sewing the buttons on their shirts.

Management

1. Make a set of shirt cards on cardstock with the number words or numerals zero through five for each student. Prepare a second set of cards with the numerals from zero up to the largest number for which your students are responsible. Copy the cards on cardstock, cut out, place numbers on the pockets, and laminate for extended use.
2. Prepare additional shirt cards for students to assemble into a student book to represent their work.
3. Gather at least 15 buttons to use with each set of numeral cards.
4. Duplicate several sheets of buttons for students to cut out and glue into their *Bears Wear Buttons* student books.

Procedure

Part One—Connecting Quantities to Abstract Representations

1. Tell the *Bears Wear Buttons* story. Give each student a set of shirt cards 0–5 and a tub of buttons.
2. Suggest that students are going to do what the bear family did when sorting their buttons to sew on their shirts. Direct the students to place the cards in the correct counting order.
3. Just as the bears did in the story, tell the students to place a set of buttons on each card that equals the numeral or number word on the card.

- Once the students are successful with this task, tell them to remove the buttons and to redistribute the cards in a random order.
- Tell them to again place a set of buttons on each card that equals the numeral or number word on the card.
- Ask the students to name the quantity and the numeral on each card.
- To record their work, provide each student with a supply of shirt pages and paper buttons. Have them record a number on the shirt and then glue the appropriate number of paper buttons on the shirt pages. Suggest they assemble these pages into a student book to take home or to read to a classmate.

Part Two—Ordering Whole Numbers

- Give each student one card from the second set of cards suggested in *Management 1*.
- Place a random card on the chalk tray. Invite the students to help you reconstruct a number line by asking questions such as, “Who has the number card that would come directly before my number? ...directly after my number? ...five spaces before my number? ...10 spaces after my number?” etc.
- When the students have correctly ordered the class set of numbers, turn several numbers around and question students about what number is missing and how they know.
- End with a discussion about other number sequences that could be created with the shirts, such as counting by twos, etc.

Part Three—Counting On

- Display a shirt with the number one on the pocket. Ask the class, “If the bear has one button in its pocket and I give it two more buttons, how many buttons will the bear have?” Invite a student to share the answer and explain how he or she got it. [$1 + 2 = 3$. The one in the pocket plus the two additional buttons equals three buttons.]
- Continue displaying shirts and practice counting on to determine the total number of buttons each bear has until the students are confident. Then give individual students a laminated shirt with a number on the pocket, a transparency or dry erase pen, and a few additional buttons and ask them to count on to determine how many buttons each bear has.

Connecting Learning

- (Point to a shirt.) Count the buttons on this shirt.
- (Point to a shirt.) How many buttons does this shirt have?
- Which shirt has five buttons?
- Which shirt has four buttons?
- Find the shirt with two buttons.

Extensions

- Design other stories that have students deal with connecting numbers to a counted set of objects.
- Encourage students to give the class word problems that would require counting on. For example, Barney Bear had three buttons in his pocket and he found two buttons on the playground, how many buttons does he have now?
- Connect to various children’s literature selections where counting is part of the stories, such as *Ten Black Dots* by Donald Crews (see *Curriculum Correlation*).

Curriculum Correlation

Crews, Donald. *Ten Black Dots*. Greenwillow Books. New York. 1986.

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